

REMARKS

Claims 1-57 were pending in the application. Claims 1-38, 42-44, 48-50 and 53-57 have been canceled. The Examiner is respectfully requested to reconsider and withdraw the rejections in view of the amendments and remarks contained herein.

REJECTION UNDER 35 U.S.C. § 102

Claims 39, 41 and 45-47 stand rejected under 35 U.S.C. § 102(b) as being anticipated by Holcomb (U.S. Pat. No. 6,042,531). This rejection is respectfully traversed.

Independent Claims 39 and 41

The Applicant notes that independent claim 39 recites a "compound magnet having a front face and comprising a plurality of segments, the segments each magnetized to provide the maximum magnetic field in a selected direction at the same selected operating point spaced from the front face of the magnet."

Independent claim 41 similarly recites "...the segments each magnetized to provide substantially the maximum magnetic field in a selected direction at the same operating point spaced from the front face...".

The Final Office Action states on page 4 that Holcomb '531 discloses a magnet divided into a plurality of segments (elements 22, 24, 20 and 18). However, Holcomb '531 does not disclose either a compound magnet or any magnet having a plurality of segments, as presently claimed and described within the context of the present application.

Holcomb discloses a magnetic flux generator 12 having four electromagnetic heads 18, 20, 22 and 24, each of which form a conventional cylindrical bi-polar magnet. These four separate individual cylindrical bi-polar magnets are completely separate from each other, and do not form a single magnet made of segments as would be understood by a person of ordinary skill in the art.

To clarify this distinction, the present application describes one exemplary magnet made from an array of segments at a total weight of 511 pounds that was capable of generating a magnetic field of 0.1Tesla at an operating point 9 inches from the front face. The present application also contrasts this exemplary compound magnet with a conventional cylindrical bi-polar magnet, which to produce a comparable magnetic field at a comparable distance would weigh 2100 pounds. This supports the notion that a person of ordinary skill in the art would understand the distinction between a compound magnet and the separate conventional cylindrical bi-polar magnet or magnets in Holcomb.

Moreover, claims 39 and 41 clarify that the magnet segments provide a magnetic field in a selected direction at the same selected operating point spaced from the front face of the magnet. The four Holcomb magnets 22, 24, 20 and 18 asserted by the Office Action as segments each have opposing polarity, such that the magnets do not provide a magnetic field in a selected direction at the same selected operating point, but rather provide a complex quadrilateral-shaped field that is not in any selected direction at any given point.

Referring to Figures 7, 9 and 11 in Holcomb, the four cylindrical magnetic bodies are shown with a positive and negative pole, and resemble conventional cylindrical bi-

polar magnets. Holcomb specifically teaches the arrangement of four separate magnetic bodies that establish four magnetic poles, where two positive poles define opposite diagonal vertices and two negative poles define opposite diagonal vertices of a quadrilateral shape. (See Holcomb, Col. 14, lines 40-46, Fig. 7). HOLCOMB states that this quadrilateral-shaped magnetic field is the electromagnetic field of the invention, which is a three-dimensional steep-gradient field having a complexity of field directions (shown in Fig. 7) that is very different from a magnetic field having a selected direction. (See the parallel magnetic field lines of the field shown in Fig.'s 19A-D and Fig. 22 of the present application).

The Applicant submits that one skilled in the art would clearly understand a magnetic field having a selected direction to mean a magnetic field having a series of constant field strength directions (see the "series of constant field strength curves C" in Fig. 14, and paragraph [0079 of the present application). Moreover, the claimed feature of a "magnetic field in a selected direction at the same operating point" is clearly understood in light of the present specification as the desired field direction shown in Fig. 22, for example.

Accordingly, the Applicant submits that a person of ordinary skill in the art would not understand the claimed features of a magnet having "a plurality of segments" that together provide a "magnetic field in a selected direction at the same operating point" to comprise the four separate conventional bi-polar magnets in Holcomb that produce a magnetic field having an ambiguous variety of directions associated with the three-dimensional quadrilateral-shaped field.

Thus, Holcomb '531 does not teach the recitations in claims 39 and 41 of a magnet having a plurality of segments, which the Applicant submits is distinctly understood by persons skilled in the art to mean a compound magnet. Holcomb '531 also does not teach the recitations in claims 39 and 41 of "magnetic field in a selected direction at the same operating point", which would be understood by persons skilled in the art to mean a series of constant curves in the same direction. As such, the magnets of claims 39 and 41 cannot be anticipated by Holcomb '531, and are allowable for at least these reasons.

Independent Claim 45

With reference to independent claim 45, this claim clarifies that the magnet has "...an at least approximately curved back face facing away from the operating point, the back face generally conforming to a constant contribution surface of the magnetic field in the selected direction." As previously discussed above, Holcomb '531 discloses a magnetic flux generator 12 having four electromagnetic heads 18, 20, 22 and 24. Each of the heads includes a conducting wire 26 wound around a cast iron core 28 (FIG. 3; col. 15, lines 20-22). Holcomb does not teach or suggest "...an at least approximately curved back face facing away from the operating point, the back face generally conforming to a constant contribution surface of the magnetic field in the selected direction." Further, the recitations of claim 45 are not inherent in the generator of Holcomb '531. As the Holcomb '321 patent teaches, "when cylindrical magnetic bodies with opposite poles on opposite faces are utilized" both sides of the magnetic device will exhibit the same magnetic field. (See Holcomb, 5,312,321, Col. 3, lines 21-25). Thus, the back side of the four magnet bodies in Holcomb '321 would produce a field having

the complex quadrupolar configuration, which does not comport with the notion of constant contribution to a magnetic field in a selected direction. Thus, Applicants accordingly submit that claim 45 is also not anticipated by Holcomb '531, and is allowable for at least these reasons.

Claims 40, 46-47 and 51-52

With regard to claims 40, 46-47 and 51-52, these claims ultimately depend from independent claims 39, 41 or 45, which the Applicant believes to be allowable in view of the above remarks. As such, the Applicant submits that claims 40, 46-47 and 51-52 are also allowable for at least these reasons.

CONCLUSION

It is believed that all of the stated grounds of rejection have been properly traversed, accommodated, or rendered moot. Applicant therefore respectfully requests that the Examiner reconsider and withdraw all presently outstanding rejections. It is believed that a full and complete response has been made to the outstanding Office Action and the present application is in condition for allowance. Thus, prompt and favorable consideration of this amendment is respectfully requested. If the Examiner believes that personal communication will expedite prosecution of this application, the Examiner is invited to telephone the undersigned at (314) 726-7500.

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